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CONTENTS

Page

Study of Certification of School Nurses by State Departments of Education 63
Lula P. Dilworth

Health Museum at Work 79
Bruno Gebhard, M.D., and Winfield G. Doyle, Ed.D.

Health Curriculum: 500 Topics 89
Oliver E. Byrd, Ed.D., M.D.

Health Science Enrichment Program in Santa Monica Schools 96
Milo P. Johnson, Ed.D., and Wilfred Snodgrass, M.D.,

Suggested Method for Audiometer Screening of Young Children 99
Jane L. Stone

Reviews 87, 95

Meeting 88

News and Notes 88

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THE JOURNAL OF SCHOOL HEALTH

Devoted to the interests and advancement of school health service and instruction. Your participation by membership is solicited.

VOL. XXVIII MARCH, 1958 No. 3

STUDY OF CERTIFICATION OF SCHOOL NURSES BY STATE DEPARTMENTS OF EDUCATION

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Foreword

A study of the certification of school nurses by state departments of education, which originated in this department in 1931, has been revised for the fourth time. Earlier revisions were made in 1937, 1941, and 1949. The 1949 revision was made in conjunction with the Education Committee, School Nursing Section, of the former National Organization for Public Health Nursing. The current study, as were the previous ones with the exception of the 1949 revision, was made by Lula P. Dilworth, Assistant in Health Education, Division of Curriculum and Instruction, Office of Health Safety, and Physical Education.

Specific purposes of these studies were to learn:

(1) which states have legislation relative to the employment of school nurses,
(2) the practices of state departments of education in issuing school nurse certificates, and
(3) the type of supervision or consultant services available at the state level on school nursing.

This study is based on information which was provided in 1956 by 45 State Departments of Education, the District of Columbia, Hawaii, Puerto Rico, and the Virgin Islands. No replies were received from Arkansas, Nebraska, Ohio, and Alaska.

Statistics represent replies from 45 States and the District of Columbia. Hawaii, Puerto Rico, and the Virgin Islands have no law nor certification provisions relative to school nurses. School nursing service is provided by each respective department of health in conjunction with the department of education. It appears that school nurse legislation and the issuance of school nurse certificates are not synonymous in each state which reported. Certificates are issued in certain states where no legislation exists and vice versa.

The findings of the 1956 study might appear to be invalidated by a comparison with the reports of previous years were it not for the evidence of positive action taken by several states during 1949 and in subsequent years. The returns for 1956 indicated that a different interpretation was made of certain identical questions which appeared on both the 1949 and the 1956 survey forms. For example, in the 1949 study, 32 states reported a permissive law relative to school nursing service. Fifteen of these 32 states reported no legislation in the 1956 study. Two of the states which reported mandatory legislation in 1949 reported permissive legislation in 1956. These discrepancies may be due in part to more discriminatory attention to providing answers for the 1956 study.

It appears that considerable progress has been made since 1949 by state departments of education toward the goal of securing better qualified nurses for work with children of school age. Each successive study of state laws relative to the employment of nurses for school work and certification practices has indicated that state departments of education are becoming increasingly aware that successful school nursing is dependent upon adequate preparation of the nurse for work as a school staff member.

Sincere appreciation is extended to each state department of education and other official state agencies which participated in this study.

FREDERICK M. RAUBINGER,
Commissioner of Education

Pertinent Findings

Twenty-six states reported having a law relative to the employment of nurses for work with school-age children in the 1956 study. Thirteen states reported a legal provision for school nursing in the 1949 study but no such provision in 1956.[1]

Four states reported mandatory school nurse legislation in the 1956 survey.[2] California and Idaho reported such legislation in 1949 and permissive legislation for 1956.

In general, state departments of education are responsible for issuing school nurse certificates. This is the reported practice by 22 state departments of education. Variances were Illinois where certificates are issued by the Department of Registration and Education; Utah, by its Department of Registration; Wisconsin, by the Certification Commission for Public Health Nurses; the District of Columbia, which accepts Civil Service certification.[3]

1 Kentucky, Louisiana, Michigan, Minnesota, Mississippi, Missouri, Rhode Island, South Dakota, Tennessee, Utah, Vermont, Virginia, Wyoming.
2 Delaware, Massachusetts, Pennsylvania, South Dakota.
3 Where the names of the units of government upon which this report is based are not listed, information from the District of Columbia is grouped with that from the states.

A few state departments of education which issue certificates reported that recommendations for certification were sought from other state agencies.

In three states in which there are no certification provisions the state department of education looks to the state department of health for recommendations on qualifications for the school nurse.[4]

The Director of the State Department of Health certifies the nurses who work in the Oklahoma schools to the Director of Finance for the State Board of Education.

The Oregon State Department of Education, in 1951, transferred the recommendation of nurses for school work to the department of health. This had been a function of the state department of education since 1932, or earlier, according to a previous report.

Four states reported that in some instances school nurses were employees of the office of the county superintendent of schools.[5]

In 1955, the Montana State Board of Health was constituted the agency of Montana to supervise and regulate school, county, and public health nurses in the performance of their duties in cooperation with the school authorities.

Three states reported that in 1956 committees were working on the establishment of certification qualifications for nurses who work in the schools.[6]

Titles other than "School Nurse" which have been adopted for the nurse who works in the public schools are "School Nurse Teacher," Connecticut; "School Nurse-Teacher," New York and Rhode Island; "School Health Nurse," Tennessee; "Teacher of Public Health and Hygiene," Indiana.

The 1956 study, as did the 1949 returns, showed a marked development in coordinated effort by state departments of education and state departments of health in developing standards for certification of nurses who work in schools.

Laws Relating to School Nurse Employment

Twenty-six states reported having a law relative to the employment of nurses for work with school-age children.[7] The law was reported as mandatory by four of these states.[8]

4 Montana, Oklahoma, and Tennessee. The Tennessee State Department of Education distributes to schools recommendations for school nursing services which were developed cooperatively with the State Department of Health.
5 California, Kansas, Maryland, and West Virginia.
6 Illinois, Virginia, Washington.
7 California, Connecticut, Delaware, District of Columbia, Idaho, Illinois, Indiana, Iowa, Kansas, Maine, Maryland, Massachusetts, Montana, Nevada, New Hampshire, New Jersey, New Mexico, New York, North Dakota, Oklahoma, Pennsylvania, South Dakota, Texas, Washington, West Virginia, Wisconsin.
8 Delaware, Massachusetts, Pennsylvania, South Dakota.

Nine states reported for the first time in the 1956 study legal provision for school nursing services.[9]

Seven of the states which reported having a law permitting the employment of school nurses indicated that no provision had been made for certification of school nurses.[10]

Eight states reported having no law, no specific standards for school nurse or school nurse supervisor employment, nor advisory or supervisory service from either the state department of education or the state department of health.[11]

Twenty-one states reported that one or more agencies were designated in the law as possible sources of school nursing service. The local board of education was specified in 21 state laws and the local board of health in 14. Other agencies mentioned in order of frequency were state department of health, six; unofficial agencies, five; other, four. All of the foregoing categories were specified by three states.

Twenty-one states require that certain school nurses be properly certificated.[12] Eleven states require that every nurse who works in a public school must hold an appropriate school nurse certificate.[13] The remaining ten states with the exception of Connecticut require only nurses employed by a board of education to be so certificated. Connecticut reported that a decision about this question has not been reached.

Five states provide for but do not require certification of school nurses.[14]

Seven states reported that school nurse certificates were issued but no school law had been passed governing the employment of school nurses.[15]

Standards for Certification of School Nurses

A variety of names are used by the individual states to describe the types of certificates which are issued.

For the purposes of this study certificates have been classified as standard; limited; emergency or substandard.

"Standard" denotes the highest certificate issued by a state, either for life, or renewable, at stated intervals.

9 Delaware, District of Columbia, Maine, Minnesota, Missouri, Nevada, Texas, Utah, Wyoming.
10 Kansas, Maryland, Massachusetts, Montana, North Dakota, Washington, Virginia.
11 Alabama, Arizona, Colorado, Georgia, Kentucky, Louisiana, Mississippi, Tennessee.
12 California, Connecticut, Delaware, District of Columbia, Idaho, Illinois, Indiana, Iowa, Maine, Nevada, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, South Dakota, Texas, Utah, Vermont, Wisconsin, Wyoming.
13 California, Delaware, Illinois, Iowa, New Hampshire, New Jersey, Pennsylvania, South Dakota, Utah, Vermont, Wisconsin.
14 Minnesota, Missouri, New Mexico, Oklahoma, Oregon.
15 Minnesota, Missouri, Oregon, Rhode Island, Utah, Vermont, Wyoming.

"Limited" denotes the certificate that is based on specified qualifications which may lead to the standard certificate upon completion of a specified number of years of service and additional study.

"Substandard" or "Emergency" denotes certificates issued usually for the period of one year when an applicant who meets the limited certificate qualifications is not available. Renewal of such certificates is based on the completion each year of a certain amount of college study leading toward the limited certificate.

Fifteen states submitted their standards for the school nurse certificate.[16] The standards as received did not in every instance describe the type of certificates that were checked on the survey form.

The constants in the certification requirements were graduation from high school or the equivalency, graduation from an approved school of nursing, and registration as a nurse in each respective state. These standard requirements are not repeated in the following content nor tables of this study.

Requirements for the emergency or substandard certificate varied from the holding of the registered nurse certificate within the state to graduation from a collegiate nursing course. One state reported that a written examination on principles and practices of professional nursing techniques was required.[17]

Limited certificates where issued were based upon the completion of from six to 30 semester hours of college credit in specified areas.

Standard certificates were issued for a stated number of years, or for life upon the completion of from six semester hours of additional college credit to the holding of a B.S. degree, or a Master's degree in one instance.

Seven states include a baccalaureate degree as one provision whereby a standard certificate may be issued.[18]

New York State requires 60 semester hours of college work beyond graduation from a school of nursing for the standard certificate; Connecticut, 32; and New Jersey, 30.

Connecticut apparently issues two types of certificates, (1) to act as a nurse in the schools, (2) to serve as a school nurse-teacher.

Table Number I provides additional information relative to certain school nurse certification standards.

16 California, Connecticut, Delaware, Indiana, Maine, Minnesota, Nevada, New Jersey, New Mexico, New York, Oklahoma, Pennsylvania, Rhode Island, Texas, Vermont.
17 Oklahoma.
18 California, Indiana, Minnesota, New Mexico, Pennsylvania, Rhode Island, Texas.

TABLE I

STANDARDS FOR CERTIFICATION REPORTED BY FIFTEEN STATES

September, 1956

State	*Emergency or Substandard*	*Limited*	*Standard*
(1)	(2)	(3)	(4)
California			A valid certificate of public health nursing. Possession of a bachelor's degree or three years' satisfactory service as a full-time school nurse in the state of California prior to September 1957, *and* completion of 36 semester hours of acceptable preparation as specified.
Connecticut (To act as a nurse in the schools)		16 semester hours of college work.	Three years' successful experience. 16 addtional semester hours of college credit and for each additional 10-year period, an additional six semester hour credit.
(To serve as a school nurse-teacher)		B.S. degree with special work in specified areas.	Three years of successful experience under the provisional certificate and a Master's degree or its equivalent.
Delaware	R.N. in State.		16 Semester hours of college credit.
Indiana	Two years of successful experience on a generalized public health or school nursing staff under qualified supervision or six semester hours credit in public health nursing.	B.S. degree, two years of experience in a well-supervised public health organization, and a year's program of study in public health nursing. The two grades of this certificate are provisional and first grade. The provisional certificate is valid for five years	Evidence of five years of successful experience subsequent to the date of issue of the first grade limited certificate.

	six semester hours credit in public health nursing.	in public health nursing. The two grades of this certificate are provisional and first grade. The provisional certificate is valid for five years and is renewable for five years. It expires if not converted to first grade within ten years.	
Maine		Approval by the Credentials Committee of the Maine State Nurses' Association as a public health nurse. Six weeks' training in a public school nursing program. (Valid for five years).	Four years of successful experience and six semester hours of college credit in a field related to nursing education during life of the certificate.
Minnesota	Must meet current requirements to do public health nursing.	B.S. degree with a major in public health nursing or a B.S. degree plus a certificate in public health nursing including six quarter hours in education. Issued for two years and renewable for five following one year of successful experience.	Five years of successful experience in the public schools of Minnesota under the first certificate.
Nevada		Two-year renewable.	
New Jersey	One year of experience following graduation from a school of nursing.	As for (2) and in addition, 12 semester hours of college credit in specified areas of study including public health nursing, health education and general education.	In addition to requirements for the limited certificate and three years of satisfactory work as a school nurse in New Jersey, 18 semester hours of college credit must be secured.
New Mexico	Six semester hours of college work in specified areas *or* 5 years of experience in school or public health nursing gained within the last 10 years.		A degree from a university program approved by the National League for Nursing

TABLE I (Continued)

State	Emergency or Substandard	Limited	Standard
(1)	(2)	(3)	(4)
			or A degree from an approved school with a major in education, sociology, home economics, or health education or Completion of 30 semester hours of college credit in specified areas of study and eight weeks of supervised student experience in a public health agency offering a family service program *or* two years on-the-job experience in a school nursing program or in a generalized public health nursing program that includes school nursing.
New York	Not specified.	Graduation from high school, graduation from an approved school of nursing, and 30 semester hours in approved professional courses.	In addition to the requirements for the limited (provisional in New York) 30 additional semester hours in approved professional courses within a 10-year period. During each successive 10-year period six semester hours in approved courses or the equivalent in appropriate professional activity.
Oklahoma	A written examination on principles and practices of professional nursing techniques, particularly those important in public health nursing.		
Pennsylvania	Not specified.	12 semester hours of college work in specified areas. Valid for three years and renewable for three years upon completion of 12 semester hours of	The Standard Limited Certificate will be exchanged for a Provisional College Certificate when a baccalaureate degree has been earned. The

Pennsylvania	Not specified.	12 semester hours of college work in specified areas. Valid for three years and renewable for three years upon completion of 12 semester hours of college study in approved areas. Subsequent renewals are based upon 12 additional semester hours of college work in approved education.	The Standard Limited Certificate will be exchanged for a Provisional College Certificate when a baccalaureate degree has been earned. The limited certificate may be made permanent after three years of successful work and six additional semester hours of college work in specified areas.
Rhode Island	Graduation from a high school, graduation from an approved school of nursing, and nurse registration within the state. This certificate is valid for one year, and may be renewed upon presentation of six semester hours of college work in specified areas.	The same as for column (2) when 30 semester hours of college work have been taken in specified areas. The certificate is good for five years and may be renewed upon presentation of six additional hours of college study, two semester hours of which may be obtained by approved travel, work, or other educational experience.	As for column (3) following 10 years of service and the securing of a Master's degree or its equivalent.
Texas	A baccalaureate degree in an approved program for nursing education, or in lieu of this requirement, a certified copy of the license which qualifies the applicant as a registered nurse under the laws of Texas. Completion of a required course in Federal and Texas Constitutions and six semester hours in American History.	Six semester hours of study in the school health program, and 24 semester hours of study in resource areas.	
Vermont	Not specified.	Completion of six semester hours of professional courses in the fields of public health, school nursing, or nursing education. This certificate may be renewed by having earned within five years of the date of the renewal, four semester hours of approved credit.	

TABLE II

TYPES OF SCHOOL NURSE CERTIFICATES ISSUED IN TWENTY-THREE STATES

September, 1956

State	*Provisional or Emergency*	*Limited*	*Standard for a Specified Time*	*Standard for Life*
(1)	(2)	(3)	(4)	(5)
California	x	x	x	
Connecticut		x	x	
Delaware		x	x	
Distict of Columbia	Civil Service Standards accepted			
Idaho		x		
Illinois	x	x	x	
Indiana	x	x	x	x
Iowa		x	x	
Maine		x	x	
Minnesota	x	(Accepts Public Health Nurse Certificate)		x
Missouri		x	x	x
Nevada			x	
New Hampshire	x	x	x	
New Jersey	x	x		x
New Mexico	x	x	x	
New York	x	x		x
Oklahoma		x	x	
Pennsylvania	x	x	x	x
Rhode Island	x	x	x	x
South Dakota		x	x	
Texas		x		
Vermont	x	x	x	
Wisconsin	x			x
Wyoming	x		x	

Types of Certificates Issued

The trend of certification in each state appears to follow, in general, the pattern for teacher certification.

Twenty-three states provided information about the types of certificates that are issued.

An emergency or provisional certificate is issued by 12 states.

A limited certificate is issued by 18 states.

A full standard certificate for a specified number of years is issued by 17 states.

Eight states issue a standard life certificate. In New York, however, a life certificate will lapse after five years if the holder has not been regularly employed and has not satisfied the in-service study and training requirements.

Seventeen states provide for advancement from a limited to a standard certificate.

The District of Columbia accepts the Civil Service Examination provisions in lieu of certification for school nursing.

Additional information about the types of certificates that are issued appears in Table II.

Agency Responsible For and Date of Establishment of School Nurse Certification Standards

Pioneer effort in the area of school nurse certification was initiated in 1920 by New York and California State Departments of Education. Indiana followed in 1923, Pennsylvania in 1925, and New Jersey and Illinois in 1931. Seven states have made provision for certification of school nurses since information was collected for the 1949 study.* Table III gives the dates by states and the state agency which established the initial provisions for school nurse certification.

TABLE III

DATES BY STATES AND THE STATE AGENCY WHICH ESTABLISHED INITIAL SCHOOL NURSE CERTIFICATION

September, 1956

State	*Year When Certification Was Adopted*	*State Department(s) Which Established Standards*
(1)	(2)	(3)
California	1920	Education[22]
Connecticut	1940	Education
Delaware	1949[19]	Education
District of Columbia	No date	Civil Service
Idaho	1947	Education
Illinois	1931	Bd. of Registration & Education[22]
Indiana	1923	Education and Health[22]
Iowa	Long standing	Not stated
Maine	1932	Education[22]
Minnesota	1953[19]	Education

* Delaware, Minnesota, Missouri, Nevada, Texas, Utah, Wyoming.

Missouri	1950[19 and 20]	Education
Nevada	1956[19]	Education
New Hampshire	1948	Education
New Jersey	1931	Education[22]
New Mexico	1933	Education[21 and 22]
New York	1920	Education
North Dakota	No date	Education
Oklahoma	1945	Education[22]
Oregon	1935	Education[21]
Pennsylvania	1925	Education
Rhode Island	1947	Education
South Dakota	1955	Education
Texas	1950[19]	Education[22]
Utah	1955[19]	Education and Health
Vermont	1934	Education
Wisconsin	1945	Education and Registration
Wyoming	1949[19]	Education

Supervisory or Consultant School Nursing Service

Six state departments of education provide school nursing supervisory or consultant services.[23] Eight such positions were reported including one vacancy to be filled. Appointees to these positions hold nursing, public health nursing, school nursing, and educational credentials and one or more degrees. Titles include consultant in school health, health coordinator, director of school health services, assistant in health education, associate in school nursing, assistant in school nursing, school nurse advisor.

Thirty-one states reported that the State Department of Health offered some supervisory or advisory school nursing service, usually upon request.[24] Such services usually were given by generalized public health nurse supervisors, 165 or more in number. Variations in titles were child and maternal health nursing supervisor or consultant nurse, pediatric nurse consultant, venereal disease and tuberculosis nurse consultant, and orthopedic nurse consultant.

One state department of health[25] reports that a public health nurse who is well qualified for school nurse supervision by education and experience holds the office and title of consultant on school health services.

19 No certification rules were reported for the 1949 study.
20 A certificate is issued only if nurse is qualified to teach.
21 Original certification. (This has been a cooperative undertaking of the State Department of Education and State Department of Health since 1951 in Oregon, and 1952 in New Mexico).
22 Recent revisions reported: California, 1956; Illinois, 1955; Indiana, 1955; Maine, 1953; New Jersey, 1950; New Mexico, 1956; Oklahoma, 1951; Texas, 1955.
23 Connecticut, Illinois, New Hampshire, New Jersey, New York, and Pennsylvania.
24 California, Connecticut, Delaware, District of Columbia, Idaho, Illinois, Indiana, Iowa, Kansas, Maine, Maryland, Michigan, Minnesota, Nevada, New Hampshire, New Jersey, New Mexico, New York, North Carolina, North Dakota, Oregon, Pennsylvania, Rhode Island, Tennessee, Texas, Utah, Vermont, Washington, West Virginia, Wisconsin, and Wyoming.
25 Texas.

TABLE IV
PROFESSIONAL UP-GRADING PROGRAMS FOR SCHOOL NURSES BY STATES
September, 1956

State	*Action*
(1)	(2)
California	Six units of work must be taken the first year and 12 units every two years thereafter to renew a provisional certificate.
Connecticut	Evidence of 16 semester hours of credit for professional courses in an accredited college must be taken not later than two years from the granting of the first certificate.
Delaware	Six semester hours of college credit must be taken each year toward the limited certificate.
Illinois	A committee is studying this problem.
Indiana	Revision of the rule which governs the time limit on emergency permits.
Iowa	Action is underway to increase the amount of work required for school nurse certification.
Michigan	A yearly school nursing workshop is sponsored jointly by the State Department of Health and the State Department of Public Instruction.
New Hampshire	Present requirements are being revised. In-service education is promoted. Two college credit courses are offered each June by a State Teachers College.
New Jersey	Four semester hours of college work must be taken each year until standards for the limited certificate are met. Newly appointed school nurses are assisted in becoming oriented to the field and in finding ways of taking the required work for certification. State Teachers Colleges and Universities are worked with relative to offering courses which will lead to certification. Conferences and institutes are promoted throughout the state.
New Mexico	Six semester hours of college work must be taken until certification requirements are met.
New York	Cooperative work with colleges and universities in giving required work for the school nurse certificate; assistance with the teaching of some of these courses.
Pennsylvania	The School District is fined $300.00 when an emergency certificate must be issued for a second year. The fourth year of college work is provided through State Teachers Colleges. This takes one and one-half years to complete.
Rhode Island	Renewal of the certificate is based on additional preparation. Two State Department of Health nurses serve on a five-member advisory committee to the State Department of Education.
Texas	The nurse is guided in the selection of areas of study for certification.
Wisconsin	All uncertificated nurses are constantly encouraged to meet requirements and an interpretation of the need is made to school administrators. An attempt is made to obtain scholarships for nurses either through the State Board of Health or the State Department of Nurses.
Wyoming	A degree requirement by 1962 has been established. The University of Wyoming is cooperating in helping the nurse to earn a degree.

Action Being Taken to Up-Grade Professional Status of the School Nurse

Positive effort to up-grade the professional status of the nurse who works in schools was reported by 16 states.[26] All sections of the United States are represented among the states which provided this information except certain southern states.

Up-grading requirements included from a specified number of college credits to a college degree by 1962.

State Teachers Colleges and State Universities are cooperating in offering the required college work. Scholarships are provided in one state.

Specific provisions by states that reported on this item appear in Table IV.

Suggestions Offered for Improving the Professional Preparation of the School Nurse

Sixteen states offered constructive suggestions relative to ways by which the preparation and employment of school nurses might be improved. In general, comments fell into the following categories:

1. Need for an opportunity to take required courses at a college or university within the state which is approved by the National League for Nursing Accrediting Service.
2. Establishment of a requirement that all nurses who work in a school hold a school nurse certificate.
3. Provision of qualified school nurse supervision.
4. More consultation service on school nursing.
5. Additional in-service education opportunities.
6. Enforcement by school administrators of requirements for school nurse certification when a nurse is appointed for school work.
7. Closer working relationships between the State Department of Education and the State Department of Health.

Table V includes the specific suggestions which were made by 16 states for improving the professional preparation of school nurses.

26 California, Connecticut, Delaware, Illinois, Indiana, Iowa, Michigan, New Hampshire, New Jersey, New Mexico, New York, Pennsylvania, Rhode Island, Texas, Wisconsin, Wyoming.

TABLE V

SUGGESTIONS BY STATES FOR IMPROVING PROFESSIONAL PREPARATION OF THE SCHOOL NURSE

September, 1956

State	*Suggestions*
(1)	(2)
Connecticut	Preparation of school nurses would be improved if some means of obtaining public health nursing courses for registered nurses from a three-year-diploma school of nursing which would be recognized by the NLN* Accrediting Service could be made available within the State. A high percentage of school nurses take extension work at institutions of higher education within the state. However, none of these institutions (several of which have schools of nursing) is approved by the Accrediting Service of the National League for public health nursing at the undergraduate level for registered nurses. Revision of the statement on certification for school nurse-teacher would be helpful. A provisional certificate is issued only to nurses who are actually responsible for some teaching.
Delaware	There is a need for a supervisor of school nursing services. Courses on school nursing from an accredited school of nursing are needed.
Dist. of Columbia	In-service education; postgraduate scholarships.
Indiana	More understanding of the job and time to help get understanding by state agencies, schools of nursing, colleges and universities, boards of education, school administrators, physicians, and parents.
Iowa	The employment of school nurses by school districts when community schools are reorganized. These schools are encouraged to make this a part of the reorganization planning.
Kansas	The School Nurses' Section is very interested in further education. We (the State Department of Health) work with them in planning institutes. We hope to provide accredited extension courses in public health nursing to make use of Federal stipends.
Maryland	Fully qualified school nurse supervisors. Opportunities for school nurses to receive minimum preparation in an accredited college or university.
Michigan	Further education of superintendents and other school officers as to the desirable qualifications for school nurses. More intensified in-service education for school nurses; more consultative service for school nurses than the small State Health Department staff can give.
New Hampshire	Cooperation on the part of School Superintendents in employing qualified nurses or requiring unqualified nurses to meet requirements within a specified time.

* National League for Nursing.

TABLE V (Continued)

State (1)	(2) *Suggestions*
New Jersey	More opportunities are needed for taking the required work for a school nurse certificate at a college or university which is approved by the National League for Nursing Accrediting Service. The provision of guidance and counselling, by colleges or universities, for nurses who are meeting certification requirements so that study toward a degree may be approached in an orderly fashion by interested nurses. The requirement of three or more years of experience following graduation from a school of nursing prior to appointment as a school nurse. It is desirable that one year of this experience be with a community public health nursing agency. Additional consultation service on school nursing particularly in rural areas or where local school nurse supervision is lacking. An on-going plan for in-service education for all nurses who work in the school.
New York	Increased understanding and cooperation on the part of the National League for Nursing; evaluation of basic collegiate programs in terms of our requirement; raise minimum certification standards to a degree program.
Oregon	Specific preparation for school nursing included in curriculum of collegiate education leading to preparation for public health nursing.
South Carolina	1. A State Plan of Certification or Merit System, including functions, standards, and qualifications of nurses, and a compensation plan with provisions for promotion. 2. The plan should provide medical direction and nursing supervision. 3. A program of training to help nurses meet recommended qualifications. 4. School nursing a part of a total community health program.
Washington	In-service education and advanced courses in public health nursing. Employment of qualified public health nurses when they are available.
West Virginia	The State Department of Education should make recommendations to County Boards of Education relative to preparation, salaries, and employment of school nurses.
Wisconsin	A closer working relationship between the State Department of Public Instruction and the State Board of Health would facilitate understanding and more uniformity of policies regarding nursing service to schools. This should result in a better understanding on the part of the school administrators of the real function of the nurse in the school, and therefore an appreciation of the need for public health nursing preparation for the nurses. In this state, many unprepared part-time nurses are employed in spite of the legal provisions. In this state, which has many school districts, better service could be given if funds were pooled, more full-time public health nurses employed to give generalized service to smaller areas including schools, and qualified nursing supervision provided. It is understood that in such instances school administration should have representation on the directing or administrative body.

HEALTH MUSEUM AT WORK

by
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Cleveland Health Museum[1]

The health museum can be a lighthouse — a guide and beacon — for informing a community about personal and public health. It does its job the way any museum does — through exhibits and interpretation of these materials[1] — and while drawing from all age levels and socio-economic groups, has a limited but self-selecting audience. A health museum's visitors are motivated, not by a love of aesthetics as in an art museum, or a curiosity about nature as in a natural history museum, but by a strong interest in their own physical and mental well-being. This appeal is a powerful magnet and enables the health museum to educate its visitors, once attracted to its doors, in personal health as well as in public health.

We have previously reported on our first six years of development.[2] In this present paper, we want to discuss where we are today and the nature of our future expanded program; what the outlook is for health museums in other places in the United States; and especially what museum experiences can be used in other fields of health education.

Seven Days A Week

The Health Museum is open seven days a week, fifty-two weeks a year. It provides facilities for an all-around health program of activities via the spoken or printed word, films, lectures, class instruction, and group discussions. By its mere existence it is a memento vitae, not a memento mori, for the more than one hundred thousand people who pass through it daily. Too much of present day health education is the switch-on, or switch-off type where a great deal of time goes into preparing an institute or some other program of a temporary and fleeting nature, never to be done again. In our 17 years of operation we already have the second generation of visitors, the young families, with their children, where Mom or Dad came to us as high school students.

Solicitors, Contributors, and Policy-Makers

Diseases are doctors' business, but health is everybody's concern. The last twenty years have seen an enormous change in the

1 Presented before a Joint Session Public Health Education Section, School Health Section, and the American School Health Association, Cleveland, November 11, 1957.

field of health and medicine. The public is no longer content to be just on the receiving end. Instead, people have become active participants in many ways, as volunteers in hospitals, as members of health councils, as solicitors and contributors to the many (too many?) health drives, as policy-makers on boards, etc. The uniqueness of the Cleveland Health Museum is its financing by all groups of the community. Even before it opened, nearly 800 individual pledges of $10 or more were received. Today, we are proud of our nearly 4000 dues-paying members, of whom two-thirds represent a so-called general public. The same proportion is reflected policy-wise in our board of trustees, of whom one-third belong to the professional groups of physicians and dentists. It was this wide community support which induced our main patron, Mrs. Elizabeth S. Prentiss, to give her former home as our first site and to make the Museum the recipient of an endowment, thus assuring stability to our operations. To honor her, we established in her name the first national award in health education in 1944.

Debunking Half-Truths

Museums are trusted by the public as places for objective information. Health museums are science museums specializing in human biology, personal and public health. Unfortunately, specialization in medicine has been carried over into health education. With all due respect for the great work of national voluntary health agencies, they have to limit their informational and educational activities to a single subject which is usually centered around a disease and not health. Besides that, the advertising smoke-screen lies heavily over the American people. We are appreciative of the help health education receives from some advertising efforts in nutrition, safety, and other fields, but we are also aware of the creation of new "diseases" for advertising purposes, of which "Printers' Ink" listed nearly 300[3] and of which "Tired Blood" is the latest example. By constant repetition in newspapers and magazines, on radio and television, in busses and store windows, Madison Avenue is convincing the American public that its half-truths are whole truths. One job of a health museum, because it can afford to be objective, is to give its visitors the facts, and thus combat the unsound advertising claims of the hucksters.

The "Wholeness" of Health

In order to discriminate between unsound and sound advice in matters of health, everybody has to have some fundamental knowledge of life sciences in general and human biology in particular. Normal growth and development from heredity to geriatrics is,

therefore, the main theme of our exhibits. There is nothing in this world which is not related to the human body. When we say "body" we include man's emotions, his mind, and his soul. With today's stress on mental health, we too often separate emotion and intellect from the soma. Health, as the word implies, is wholeness. We like to think that health means being physically and mentally "at ease." Good health maintenance is nothing else but applied biology and that goes for public health too. Man, after all, can hardly improve nature.

The Health Educator as Museum Interpreter

Lay participation, as opposed to the medical profession per se, has already been mentioned. Nowhere is this better demonstrated than in our relations with the schools.

By 1951, when our Department of Education was formally established, demands for class instruction had increased to the point where it became essential to provide professionally competent services for the schools if we were to reach this important segment of the community. Seven years later, we are proud to report that the school attendance has more than tripled. We are now providing better instruction than ever before with three full-time health educators on the staff, and our offerings are more varied.

No better proof is needed for the worth of our educational offerings than the financial support received from the schools themselves. This takes two forms. One is the assignment of a full-time teacher to the Museum; the other is a service contract.

Two boards of education — the City of Cleveland and the nearby suburb of Shaker Heights — have teachers working in the Museum throughout the school year. These men handle all classes making visits to the Museum, and when not scheduled for Museum classes, supplement the work of the classroom teacher with special lessons and demonstrations in the school, using Museum materials.[4] If the Museum were to render the same service, it would require two extra staff instructors and a minimum of $10,000 in the budget.

We have just recently inaugurated service contracts with schools. Our Museum is financed entirely from private funds without either tax support or help from the Community Chest. An Ohio State law makes it legal for schools to purchase supplemental services from eleemosynary institutions like museums, and we are receiving the finest cooperation from the schools that use us regularly.

The secret of our success with the schools, as with similar educational activities in all museums, is to be found in the word "supplemental." Where else can the eight-year-old see the parts of

his body in a transparent model except in a museum? What classroom is equipped with a combination amplifier and oscilloscope to hear and see a heart beat? Is there any better way to acquaint fifth and sixth graders with life's beginnings than with a series of models explained by a specially trained instructor?

Sex in A Unique Setting

It is in this latter area that we have made our most lasting contribution over the years. On a map of Ohio, take Cleveland's public square as the center of a circle and scribe an arc with a 50-mile radius. Within or just over that line, covering 15 northeast Ohio counties, are hundreds of schools, including Cleveland's own Cuyahoga County, that make at least one Museum trip a year for a lesson on human reproduction. These schools represent both levels — elementary and secondary — and all types — public, private, and parochial. Teachers have learned that recommended films, seen in the school or at the Museum, followed by a visit to the Museum's Wonder of New Life Room, with its incomparably fine Dickinson models, provide an experience with a minimum of emotional trauma in an atmosphere conducive to maximum learning and retention of facts. So high does interest in these exhibits run, in fact, that you can often find a youngster explaining them to his parents on a Sunday afternoon following his class visit.

Meeting the Demand for Teaching Materials

Over the past five years there has been a growing demand from teachers for exhibits on human genetics. From the standpoint of our adult visitors, as well as our school children, we have been increasingly concerned about the inarticulateness of the Atomic Energy Commission in particular, and government officials in general, in matters dealing with nuclear energy and human biology. We do not stand alone; other institutions, and many individual scientists feel that it is inexcusable for the AEC to keep the American people in such ignorance of the biological effects of radioactive fall-out from testing of nuclear devices and of radiations from industrial uses of atomic energy. It is in part to offset this failure, and in part to provide basic information about the principles of heredity, that a new exhibit titled "Human Genetics" is nearing completion. To the best of our knowledge, it is the only Museum exhibit that has ever dealt so extensively and so exclusively with heredity in human beings and is still too new and untried to evaluate accurately.

Besides providing these kinds of exhibits, and those described below, we have endeavored to help the teacher at the classroom

level of health instruction. We furnish schools with suitcase exhibits on some of the commoner phases of personal health in the school curriculum, such as grooming, sleep, and posture,[5] and these have been successfully used in many parts of Ohio as well as by the United States Information Service in English-speaking foreign countries. We have just completed a set of teaching slides on alcohol education for secondary schools and are in the process of preparing a similar set to complement our genetics exhibit. As staff time and budget permit, we have plans for expanding the suitcase series and developing new visual aids in the form of slides, charts, and posters.

Expanding Frontiers in Health Education

What the future of our educational work will be is a matter of pure conjecture, but we know some of the directions in which we would like to move. We have served in the recent past as a training ground for inexperienced health educators. After a year or more as Museum teachers, several of our staff have moved on to more advanced positions like school health coordinators, high school instructors in family life education, and college instructors. Shorter periods of training — from one to three months — have been available in the form of internships for persons with special interests. Through the generosity of our Women's Committee, the annual Lester Taylor Memorial Scholarship of $500 makes it possible for a scholarship winner to train at the Museum at minimum cost.

We would like to extend our training facilities still further, making field work done at the Museum by candidates for degrees in public health recognized for credit by the state universities and schools of public health. We would also like to expand facilities to include the Nation's first junior health museum. The junior museum would then be a tool for the training of school health personnel as well as for the instruction of children in the area served by the Museum. We would hope by our own example to make a junior health museum so practical that similar museums could be established on university campuses for training purposes, and smaller versions for the use of school children set up by boards of education throughout the country. With a junior health museum of our own we could have year-round children's activities after school and during summer vacations. A start has already been made in this direction with Saturday puppet shows, instruction for scout troops, and science crafts; a more diversified activities program of this kind would be possible with more staff, facilities, and money.

In past years, we have developed two kinds of exhibits; one, more or less permanent on the fundamentals of human nature and how we are made, work, and live; the other, dealing with man's health or disease, his relationship to his physical and social environment. The last type is of a temporary character, specially aimed at improving the health of the community. We know that the public is not primarily interested in public health and that progress in public health rests largely on the improvement of personal health.

One of our latest experiments, currently on display, is our exhibit on "Alcoholism Is An Illness." H. Daifuku has said that "exhibits have proven to be one of the best ways of demonstrating the validity of new concepts."[6] We not only agree with this statement but have repeatedly demonstrated its validity through exhibits like "Live Long and Like It," "Races of Mankind," "We the People," and others. Individuals concerned with fundamental education, including those working in so-called under-developed areas, might well profit by this Museum's experience, because with imagination and initiative, it can be applied to all fields of human endeavor.

To dispel any feeling that we are complacent about our program, we hasten to say here that we realize better than most, perhaps, that the surface has only been scratched. We are aware of the nearly unlimited field in all phases of school health and physical education that exist, and our obligation to meet those demands if possible. There are several ways to accomplish this end: by establishing one or more junior health museums in Greater Cleveland: by furnishing a broad program including emotional and mental health at the parent institution; and by helping the administrator and teacher with new and varied materials for classroom instruction. There is a growing need for an active program in industrial hygiene in an industrial city like Cleveland, and for Museum activities at the adult level generally, especially for older persons with chronic but not debilitating illnesses.

We are gratified, of course, that in our short seventeen year history our attendance has doubled up to 60,000 annually, our membership has increased five times to 4000, and that our budget likewise has increased to more than five times the original one to $130,000. We regard this not as the end, but only as a sound beginning.[7]

Over the next three years, we plan a development program that will cost $100,000 or more. One of the first steps in this program is to acquire additional exhibit space in our main building, and

certain measures have already been taken to make this possible. Next, capital improvements will be made on the building to provide a better setting for exhibits. Third, a greatly expanded exhibit program is in the making which will delineate the structure and function of man's body, and the ways man has used his body to live in, cope with, and to alter where necessary, the environment he lives in.

With the completion of such a program several years hence, we hope to contribute another layer to the growing edge of health education in America.

Health or Illness — The Patient's Decision

It is fallacy that everybody is interested in health; it is usually taken for granted. By the same token we are sure that everybody is interested in disease. Being sick, or having a sick one in the family, is an experience everyone has in his lifetime. Interest in disease has nothing to do with morbid curiosity, often quoted by a minority of physicians who are afraid that the public might know too much about disease. They forget that it is always the patient who makes some kind of a first diagnosis, and it is always the patient who initiates a course of treatment by either treating himself, or getting help from unqualified sources, or from a well-trained physician. Health museum techniques have a wide application in doctors' offices, hospitals, and health centers. The Lankenau Hospital in Ardmore, Philadelphia pioneered by opening in 1953 the first health museum inside a hospital.[8] Hinsdale, Illinois, will have the first health museum in connection with a series of private doctors' offices, a project sponsored by the Kettering Family Foundation, opened in January, 1958.

An Ounce Or A Pound ?

Presently, the American public and the health profession are so preoccupied with curative medicine and medical care that the possibilities which preventive medicine has to offer are going to be overlooked. There has been demonstrated, again and again, that one-third of all accidents and disease can be prevented, if we apply in our daily living what we already know. Health education is partly to blame for our not applying our present knowledge. As a relatively young profession, it is going through stages and phases, forgetting that prevention of disease is a sine qua non of health education. Just as a hospital has become the symbol of curative medicine, health museums can play the same part for preventive medicine, especially when they are located where direct health services might be available such as a health center.

There is no doubt that our visitors are asking for more disease information and that we are reluctant to give it to them, feeling that this job is better done at the bedside, in the doctor's office, or in the out-patient department, since each case is different.

Difference Between Lay and Scientific Medicine

We know all too little about the beliefs, habits and attitudes of the American people regarding health and disease. There is a gap between scientific and lay medicine, not because of substance and intent, but because of method and approach. There is the scientifically trained physician in his rational search for facts, tempered in his work by permanent doubt; there is the patient with his basic needs of faith and beliefs in recovery and salvation. Health museums have to consider both viewpoints. They are not allowed to oversell scientific medicine, or to sell short their visitors, whose faith and confidence are indispensable factors for successful healing.[9]

Special Learning Situations in Four Stages

Interest in matters of health changes with certain ages and life situations. We have already mentioned the case of being sick. There are at least four periods in a person's lifetime when interest in health is increased. First it is the very young child who has to get his basic training from his parents, from toilet training to eating habits to sex education. The early teenager has an increased interest in all forms of physical appearance and the more involved problems of puberty. A third period is the time when a young married couple expect their first child. People who might not care a hoot about their own health, want to do the right thing for their expected baby. Last comes the period when one attends more funerals than weddings and is not only willing but eager to diet, to drink less, or even to stop smoking.[10]

No museum is large enough to cover all subjects and take advantage of these learning situations at all times. We help with special exhibits and annual institutes. During the war years, classes for expectant mothers were regularly held at the Museum. For the past two years, the Parent Education Association has conducted two classes a week on natural childbirth. The Museum was the first location of the now-annually-held Golden Age Hobby Show in 1946 and our special exhibition, "Live Long and Like It" sparked the formation of a community-wide organization of goldenagers, run by the Welfare Federation and the Cleveland Public Library.

The Meeting of Art and Science

Medicine and education are both based on science but their

practical application includes all the arts. Staff artists at the Health Museum create, together with educators, new visual aids from slides for television to three dimensional plastic models demonstrating "How to Make Health Visible."[11] Today's health educators depend too much for visual materials on what is available from commercial sources. This material is often good, but it leaves many subjects uncovered because there are not enough financial returns. Health educators need better training in "do it yourself methods" of visual arts and especially in creating materials fitted to the special local needs of their work. We can often reach people through the many art media more readily than we can through preaching or by a psychological approach.

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11. Making Health Visible. Board of Trustees, Cleveland Health Museum, Jan. 1955, pp. 1-36.

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REVIEW

Enriching Family Life — Bess B. Lane, Consultant on Child and Parent Education, Swarthmore, Pa. Published by Public Affairs Press, Washington 3, D. C., 1957. Price $3.25. (Introd. by Lyman Bryson.)

This book is written for the lay reader, specifically the parent. Some of the material is based on the author's own rich background as a mother and teacher, and much is the outcome of long experience in dealing with other mothers and teachers and the children for whom they are responsible. The book is richly illustrated with anecdotes, accounts of procedures that worked, and helpful suggestions to parents of small children, whose problems center about the needs and opportunities in the home, school and community.— *M.A.H.*

PROGRAM — COMMITTEE ON TUBERCULOSIS AMERICAN SCHOOL HEALTH ASSOCIATION

Philadelphia, May 19, 1958

"Tools of the Trade" by R. Merrill Alling, Field Consultant, Montana Tuberculosis Association.

"Our Twenty-eight Years with the Mantoux Test" by Blanche deKoning, R.N., Executive Secretary, Kent County Tuberculosis Society, Grand Rapids, Michigan.

"A Second Look at Tuberculosis" by Herman Kleinman, M.D., Chief, Section on Chronic Diseases, State Board of Health, Minnesota.

"The Importance of Tuberculin Testing in Child Health Supervision" by Pauline G. Stitt, M.D., School of Public Health, Harvard University, Boston.

"Quantitative Aspects of the Tuberculin Test" by David T. Smith, M.D., Department of Bacteriology and Medicine, Duke University, Durham, North Carolina.

The annual meeting of the National Tuberculosis Association will be held in Philadelphia during the week of May 18. In cooperation with this Association, The American School Health Association each year has a session on tuberculosis in relation to the school health program.

The program is under the guidance of Dr. J. A. Myers, Chairman of our Tuberculosis Committee. We trust that as many of our members who can will arrange to attend this meeting.

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NEWS & NOTES

OPPORTUNITIES FOR HEALTH TEACHING ABROAD

The Board of Missions of the Methodist Church has announced a need for 146 teachers, librarians, school administrators and other educational workers in its mission fields in 26 countries overseas in 1958.

In issuing a call for 547 missionaries overseas next year, the Board, through its Office of Missionary Personnel (150 Fifth Ave., New York 11, N. Y.), is seeking to recruit 114 women and 32 men to serve as educational missionaries.

The largest number of openings is for secondary school teachers, with needs listed for 61 women and 16 men. Teachers are sought for a varied range of courses, including science, mathematics, English, music, home economics and commercial subjects.

THE HEALTH CURRICULUM: 500 TOPICS

by

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The school curriculum of learning experiences in health is partly established by legal regulations in all states, but these provisions do not make certain a comprehensive orientation to the multiplicity of health problems that exist in our society today.

What are the specific health problems around which learning experiences should be established from kindergarten through college? This is a practical question for curriculum committees, teachers, and school administrators to answer if an adequate series of learning experiences in the field of health is to be arranged in the schools.

The author attempted to give some guidance to recognition of our leading health problems in 1950 when a list of 300 health problems of significance for curriculum construction was published in the *Research Quarterly*.[1] This article is an extension of the list of 300 health problems to a total of 500 health topics, each of which can be developed into a single learning unit for use in the schools.

This list of 500 health problems has been derived from the reading of approximately 25,000 articles that have appeared in medical, public health, and allied scientific journals over a period of 15 years. Nearly 4,000 of these articles on health have appeared in the author's 14 volumes of the *Health Yearbook* which have appeared annually since 1943.

The basic concept underlying the preparation of this list of 500 topics is that *any health problem consistently receiving attention in our medical, public health, and allied scientific journals is a health problem of significance* about which the professional leaders in the field of health are concerned. Health articles that are trivial in nature simply do not appear in our professional health journals. Such articles would be automatically screened from publication by the editorial board of the professional journal involved. A list of articles or topics that receive consistent attention in such journals is therefore a key to the significant health problems of today.

It must be remembered that the following list of 500 health topics is but a statistical sample of an even larger group of health problems. Even this statistical sample should provide more learning experience potentialities than curriculum committees can

1 Byrd, Oliver E. "Health Problems of Significance for Course and Curriculum Construction," Research Quarterly, 21: 3-10, (No. 1), March, 1950.

utilize. In other words, the health educators can probably do no better than to sample the sample. It must be remembered, however, that learning experiences can be constructed around many of these health topics in some other phase of the student's school life than just the classroom.

The author has classified the 500 health topics into 20 major categories. It is suggested, that for a comprehensive curriculum of learning experiences in health, some of the health problems of each category be utilized.

It is to be expected that different learning experiences will be arranged in different communities in order to take account of local health problems that are less significant elsewhere. Many health problems have a significance in later years, however, and it is necessary to have an adequate comprehension of problems well beyond the immediate community needs or the personal health problems of the moment, if a good curriculum of learning experiences in this field is to be developed for the students.

From such an abundance of problems it should be possible to arrange a curriculum at the elementary school, the secondary school (including the junior high school), the junior college and the university *without a duplication of any health problem* unless the repetition has significance. Neutral leadership in the development of such a vertical curriculum may sometimes be needed. This is an administrative responsibility.

A listing of the 500 health topics follows, classified into the 20 broad areas previously mentioned.

1. HEALTH AS A SOCIAL ACCOMPLISHMENT

1. Progress in American medicine
2. Life expectancy in the U.S.A.
3. Conquest of individual diseases
4. Downward trend of death rates
5. Improvements in infant and maternal mortality
6. Improvement in hospitals
7. Gains against child diseases
8. Services to crippled children
9. World food and medical relief
10. Decline in tuberculosis deaths

2. HEALTH AS A SOCIAL PROBLEM

11. Health and income
12. Housing and health
13. River pollution and health
14. Health of migrant workers
15. Health of minority groups
16. Soil depletion and health
17. Air pollution (smog)
18. Problems of the handicapped
19. Rural health problems
20. Leading causes of death
21. Leading causes of illness
22. Biological (germ) warfare
23. Nuclear warfare
24. Overpopulation and health
25. Cultural relationships to health (anthropology)
26. Congressional health proposals
27. Health needs of the nation
28. Presidential health plans
29. Problems of socialized medicine
30. Buliding the healthful city

3. NUTRITION AND HEALTH

31. The Basic Seven Food Groups
32. Importance of breakfast
33. Between-meal feedings
34. Food and mental health

35. Values of specific foods
36. Importance of food minerals
37. The vitamins
38. Vitamin B complex
39. Health aspects of proteins
40. Fats in human nutrition
41. Carbohydrates and sweets
42. Cooking and food values
43. Health values of milk
44. Foods and overweight
45. Problem of underweight
46. Effects of storing on foods
47. Nutritional values of canned foods
48. Frozen foods
49. Dehydrated foods
50. Food-borne epidemics
51. Health hazards from foods
52. Chemical additives in foods
53. Fats and heart disease
54. Foods and dental health
55. Feeding problems of handicapped
56. Artificial sweetening agents
57. Scurvy
58. Food allergies
59. Vitamin overdosage
60. Enriched foods: breads, cereals
61. Foot-and-mouth disease
62. Dietitians
63. Electronic cooking
64. Reducing diets
65. Pasteurization vs. raw milk
66. Nutritional diseases
67. Water and health
68. The food industries
69. Homogenized foods
70. Food fallacies

4. PHYSICAL FITNESS

71. Status of national fitness
72. What is physical fitness?
73. Values of physical exercise
74. Can a person exercise too much?
75. Prevention of physical fatigue
76. Exercise and weight control
77. Military drill vs. physical education
78. Sports vs. apparatus activities
79. Exercise and convalescence
80. Exercise and menstruation
81. Age and capacity for exercise
82. Best age for physical effort
83. Nutritional needs in exercise
84. Posture and body mechanics
85. Is there an "athletic heart?"
86. Paralysis from crossing the legs
87. Athletic injuries
88. Head injuries in boxing
89. Injuries in football
90. Athletic accident benefit plans
91. Myasthenia gravis
92. Fatigue fractures
93. Swimming cramps
94. Remedial (corrective) exercises
95. Neurocirculatory asthenia
96. Playground accidents
97. "Athletes" foot
98. Osgood-Schlatter disease
99. Sweating and health
100. Drugs and athletic performance

5. MENTAL HEALTH AND DISEASE

101. Basic emotional needs
102. Mental hygiene for the normal
103. Mental health in infancy
104. Prevention of mental illness
105. Causes of mental illness
106. Types of mental disorders
107. Retarding mental decline
108. Psychological basis of crime
109. Hazards of the high I.Q.
110. Psychological warfare
111. Prevalence of mental illness
112. Treatments for mental illness
113. Limitations of psychotherapy
114. Tensions and anxieties
115. The mentally retarded
116. Psychiatry and religion
117. Fatigue and nervousness
118. Jealousy
119. Bedwetting
120. Insomnia
121. Lying
122. Stealing
123. Childhood misbehaviors
123. Why children are taken to psychiatrists
124. Commitment of the mentally ill
125. Hormones and mental health
126. Signs and symptoms of mental illness
127. Neurotic heart disease
128. Physical effects of worry
129. Truth serums and lie detectors
130. Mental and emotional tests
131. The psychiatric interview
132. National Mental Health Act
133. Depression
134. Causes and prevention of suicide
135. The tranquilizing drugs
136. Psychoquacks
137. The electroencephalogram
138. Mental institutions
139. Research in mental health
140. Brain surgery

6. HEREDITY AND EUGENICS

141. Genetic effects of radiation
142. Hereditary bleeding diseases
143. Value of genetics in medicine
144. Diabetes
145. Gout
146. Muscular dystrophy
147. Is cancer hereditary?

148. Allergy and heredity
149. The Rh blood factor
150. Hereditary defects

7. INFECTION AND IMMUNITY

151. Leading communicable diseases
152. Epidemic intelligence
153. Tuberculosis
154. Desirable immunizations
155. BCG vaccination
156. Poliomyelitis
157. The Salk (polio) vaccine
158. Handshaking and disease
159. Insects and disease
160. Flies and disease
161. Mosquitoes and disease
162. Malaria
163. Diphtheria
164. Tetanus
165. Pneumonia and influenza
166. Gamma Globulin
167. Smallpox and vaccination
168. The Coxsackie viruses
169. The Adenoviruses
170. Infectious mononucleosis
171. The "common cold"
172. Diseases from animals
173. Rabies
174. Brucellosis
175. Q-fever
176. Venereal disease
177. Alabama blood testing program
178. Pre-marital blood examinations
179. Pre-natal blood examinations
180. Infectious hepatitis
181. Encephalitis
182. Psittacosis
183. Leptospirosis
184. Trichinosis
185. Whooping cough (pertussis)
186. Sulfa and the antibiotics
187. Strep infections
188. Prevention of infections
189. DDT
190. Other infections

8. CHRONIC & DEGENERATIVE DISEASE

191. Heart diseases
192. Cancer
193. High blood pressure
194. The ulcer problem
195. Hemorrhoids
196. Chronic ulcerative colitis
197. Arthritis and rheumatism
198. Varicose veins
199. Migraine headaches
200. Harelip and cleft palate
201. Cerebral palsy
202. Epilepsy
203. Gallbladder disease
204. Allergy and the antihistamines
205. Leukemia
206. Kidney stones
207. Goiter and thyroid disease
208. Multiple sclerosis
209. Asthma
210. Health problems of old age

9. HABIT-FORMING SUBSTANCES

211. The problem drinker
212. Methyl (wood) alcohol
213. Social effects of alcohol
214. Narcotics in medicine
215. Narcotic regulations for physicians
216. Drug addiction in adolescence
217. Social effects of drug addiction
218. Can drug addicts be cured?
219. Marihuana
220. Tobacco and health
221. Tobacco and lung cancer
222. Dangers of "pep" pills
223. Effects of tea and coffee
224. The barbiturates
225. The bromides

10. SIGHT, HEARING AND SPEECH

226. Lifelong care of the eyes
227. Sudden loss of vision
228. The cross-eyed child
229. Injuries to the eye
230. Detachment of the retina
231. Retrolental fibroplasia
232. Glaucoma
233. Eye banks
234. Medical emergencies of the eye
235. Different kinds of glasses
236. Cataracts
237. Eye exercises
238. Radiation injuries to the eye
239. The eye examination
240. Causes of hearing loss
241. Ear infections in childhood
242. Wax in the ears
243. Hearing tests
244. Adenoid surgery and irradiation in respect to hearing
245. Pure tone audiometry
246. Aids to hearing
247. Hearing and mental health
248. Fenestration operation
249. Stapes mobilization surgery
250. Causes of defective speech
251. Speech and mental health
252. Stuttering
253. Speech therapy
254. Speech in relation to hearing
255. A community speech and hearing program

11. CARE OF THE SKIN

256. Sunbathing
257. Acne
258. Athlete's foot (fungus infections)
259. Warts
260. Plantar warts
261. Overtreatment dermatitis
262. Burns
263. Psychogenic skin disorders
264. Skin infections
265. Skin disease emergencies

12. DENTAL HEALTH

266. Causes of dental illness
267. Sugars and dental decay
268. Health of supporting tissues
269. Origins of dental fears
270. Antienzyme toothpastes
271. Fluoridation of water supplies
272. Fluoridated toothpastes
273. Ammoniated toothpastes
274. Prevention of dental decay
275. Askov dental demonstration

13. SAFETY

276. Accidents as a national problem
277. Traffic accident problem
278. Speed and accidents
279. Drunken driving
280. Hit-run drivers
281. Protection of pedestrians
282. Parking and traffic accidents
283. Accident procedures
284. Road conditions and accidents
285. The two basic emergencies of first aid
286. Crash injury studies
287. Head injuries
288. Fire Safety
289. Fire extinguishers and their use
290. Electrical accidents
291. Bicycle safety
292. Farm hazards
293. Home accidents
294. Safety in the water
295. How to use a gun safely
296. Dangers of fireworks
297. Aviation safety
298. Railroad safety
299. Artificial respiration
300. Accidents in old and young

14. HEALTH AND THE PHYSICAL ENVIRONMENT

301. Motion sickness (sea, air, and car sickness)
302. Radiation and health
303. Rhus poisoning (poison oak, etc.)
304. Skin diving hazards
305. Lightning
306. Bee and wasp stings
307. Snake bites, poisonous
308. Black widow spider
309. Blast and explosion
310. Frostbite
311. Immersion foot
312. Heat stroke
313. Sunburn
314. Cold injuries
315. High altitudes
316. Ragweed control
317. Volcanoes
318. Earthquakes
319. Floods and health
320. Effects of life in tropics
321. Fires
322. Tornadoes
323. Hurricanes
324. Dust and disease
325. High pressures
326. Sunlight and health
327. Sonic boom
328. Fungus content of air
329. Pollens in the air
330. The Donora Episode
331. The Great London Fog
332. Carbon monoxide hazard
333. Poisonous plants
334. Survival in the wild
335. Hazards in the sea

15. HEALTH SERVICES AND FACILITIES

336. The medical profession
337. The nursing profession
338. The dental profession
339. Physical therapy
340. Multiple health occupations
341. Veterinary medicine
342. Foreign doctors in the U. S.
343. Medical ethics
344. Medical specialists
345. Laboratory technicians
346. Medical and surgical costs
347. Blue Cross Hospital Insurance
348. Blue Shield Medical Care
349. The autopsy
350. The ballistocardiogram
351. Faith healing
352. Human milk banks
353. Air ambulances
354. Health and accident policies
355. Quackery in health
356. Hospital service
357. Animals in medical research
358. Blood donors and blood banks
359. Thermometers
360. Jobs in public health
361. Pharmacy
362. The chest X-ray

363. Selection of a health adviser
364. Evaluation of health information
365. Laboratory health tests

16. FAMILY HEALTH

366. Preparation for marriage
367. Pregnancy and health
368. Health aspects of fertility
369. Infant and child feeding
370. Natural childbirth
371. The premarital examination
372. Multiple births
373. Cesarean surgery
374. Rooming-in
375. The climacteric (change of life)
376. Accidental child poisonings
377. Infant colic
378. Causes of widowhood
379. Causes of divorce
380. German measles during pregnancy
381. Child adoptions
382. Baby sitters
383. Immunization in children
384. Juvenile delinquency
385. Births in hospitals or homes
386. Causes of infant deaths
387. Sex instruction
388. Safest age to have a baby
389. Home care of the sick
390. Tuberculosis and pregnancy
391. Epilepsy and pregnancy
392. Maternal mortality
393. Early rising after childbirth
394. Breast feeding vs. bottle
395. Safety in the home
396. Convulsions in children
397. Menstrual problems
398. Family health insurance
399. Mental health in marriage
400. Family quarrels
401. Health for grandparents
402. Health qualifications for marriage
403. Eating habits in children
404. Leading illnesses of children
405. Health reasons for divorce

17. SCHOOL HEALTH

406. Scope of school health program
407. The school physician
408. The school nurse
409. Athletics and health controls
410. Correction of health defects
411. The hospital school
412. The Epileptic: homebound child
413. Immunizations in school
414. Emotions and learning
415. School bus safety
416. School safety patrols
417. Radiant disinfection of schoolrooms
418. Should schools close during epidemics?
419. The school lunch program
420. Teacher health inspections
421. The health course
422. Functions of a health coordinator
423. Vision testing in schools
424. The pre-school roundup
425. Tuberculin testing in schools
426. The Astoria Plan
427. Hearing tests in schools
428. School program for mental health
429. The healthful school environment
430. Health laws in schools

18. OCCUPATIONAL HEALTH

431. Scope of industrial health
432. Fatigue in the worker
433. Health of women in industry
434. Nutrition of workers
435. Occupational skin diseases
436. Industrial dusts and health
437. Handicapped workers
438. Problem drinker in industry
439. Workers with heart disease
440. Off-the-job accidents
441. Sight conservation in industry
442. Industrial safety programs
443. Union welfare funds
444. Union health centers
445. Health hazards in agriculture
446. Health and absenteeism
447. Health hazards in specific occupations
448. Noise, vibration and health
449. Dangers of industrial solvents
450. Labor-management health contracts

19. COMMUNITY HEALTH SERVICES

451. The U. S. Public Health Service
452. Department of Health, Education and Welfare
453. Federal Food and Drug Administration
454. State health departments
455. County health departments
456. City and local health departments
457. Voluntary health agencies
458. Community health museums
459. Court decisions on health
460. Multiple screening programs
461. American Red Cross Blood Program
462. Community aspects of fluoridation of water supplies
463. Community health councils

464. Health resolutions of the American Public Health Assn.
465. Health platform of the American Medical Assn.
466. State vaccination laws
467. The chlorination of water
468. Restaurant sanitation
469. Sewage disposal
470. Mosquito control measures
471. Milk ordinance communities
472. Community rat control programs
473. Dairy sanitation
474. Community problem of prostitution
475. Activities of local health officers
476. Important studies of national health
477. Health bills in Congress
478. Health problems of American Indians
479. Sanitation of water supplies
480. Reportable diseases

20. INTERNATIONAL HEALTH

481. The World Health Organization
482. Medicine in foreign countries
483. Health in South America
484. Health in India
485. The World Medical Assn.
486. World prevalence of leprosy
487. World Federation for Mental Health
488. World food needs
489. Health in Asia
490. The National Health Service in England
491. Socialized medicine in Scandinavia
492. Leading world health problems
493. World-famous epidemics
494. Shipping in relationship to disease
495. International quarantine
496. Worldwide cooperation in the reporting of epidemic diseases
497. Vaccination requirements for international travel
498. Health problems of specific countries
499. The World Health Assemblies
500. The narcotics problem on an international scale

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REVIEW

A Handbook of Animal Psysiology —E. M. Pantelouris, B. Sc., Ph. D. Printed in Great Britain by the Chiswick Press, New Southgate, N. H. Available from Williams and Wilkins Co., Baltimore, Md. 1957. Price $6.25.

This concise and well illustrated handbook in the field of animal physiology is divided into five parts, each devoted to a specific aspect of life functions; Response to Stimuli, Nutrition and Respiration, Energy Yielding Processes, Internal Environment and its Regulation, and finally Reproduction.

There is a timely discussion of each topic, pointing out basic facts and their significance, together with much new research material and some mention of conflicting viewpoints and unsolved problems with a view toward pointing out new avenues for investigation and trends of modern thinking in physiological science. An excellent supplementary reading list contains references to reports of more recent studies in the various subject areas. Nearly ninety references are listed, of which over one-half were published within the last five years. The text offers an excellent review for students with considerable background in the biological sciences.—*M.A.H.*

HEALTH SCIENCE ENRICHMENT PROGRAM IN SANTA MONICA SCHOOLS

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Santa Monica schools and the local medical and dental associations are trying a new educational venture. Together they have organized after-school medical and dental-science groups at 5th and 6th grade levels. These after-hour enrichment classes are designed to interest specially capable youngsters in health science careers.

Surprising things are happening in the medical world. Medical organizations are taking a long hard look at many of their time-honored traditions. In keeping with the times, with the sweeping social changes now occurring, a new medical look is becoming noticeable — a new look in social responsibilities and even in traditions and ethics.

Nowhere is this more conspicuous than in the general field of medical public relationships and specifically in health instruction. The great majority of County, State and National organizations have developed school health committees. These have set up shop and developed lines of communication with educational authorities. Furthermore, individual doctors have become aware of their obligations as members of the educational team. The health-science enrichment groups are only a small part of the total health program of the Bay Branch of the Los Angeles County Medical Society and the Fifth District Dental Association. These groups are one phase of the health education program which we believe is somewhat unique to our area. With modifications it could be tailored to almost any school system.

The project originated as an answer to an educator's rather philosophical question. The question was raised as the result of an effort to stimulate career interest in the general fields of science and health. Stated simply: "Is it possible that there are large groups of pupils going through our public schools who have latent medical-dental science abilities but whose interest is not aroused early enough?" Believing the answer to this question might be yes, the Santa Monica School Administration began looking for a method of finding pupils with special interest and capacity in these fields and for a way to challenge and interest them in health-science

careers. Sponsors of the idea also hoped that the by-product, health education, of such a program might become as valuable as the main objective. These then were the objectives.

It speaks well for the liaison previously established between the fields of education, medicine, and dentistry to know that the problem was referred to the leaders of each group for consultation. As expected, the doctors and dentists were hesitant on curriculum matters. Their preliminary and rather conservative feeling was that educational offering at the sixth grade level should be of a general nature; something rather intangible that might be summarized as medical or dental biology. The educators, on the other hand, with the objectives more definitely in mind thought the subject matter should adhere to the line, science — medical and dental. The doctors wondered, were surprised at this turn, but became enthusiastic at having their profession so pointedly emphasized. Their public health and executive committees endorsed the idea, a doctor and a dentist were appointed from each association to serve in an advisory capacity for the project.

There were no guide or teaching units to tell how or what to do, or why to do it. Meetings were held. The medical and dental advisors, science teachers, elementary principals and supervisors were consulted. Acting on the group's advice it was decided to try a Medical-Science group at one elementary school and a Dental-Science group at another. (Similar groups were organized at other schools for Chemistry-Science and Physical-Science). It was suggested that pupil participation, experimentation, and demonstrations be emphasized.

The selection of teaching personnel presented a problem. Elementary teachers felt inadequately prepared in the subjects. A wise selection seemed important; the experiment's success once launched would depend on the teacher.

Finally a junior high school science teacher was selected for the medical-science class. After teaching her 7th and 8th grade classes, she came to the elementary school to work with the after-school group. The class met regularly at the elementary school one afternoon per week and took field trips to hospitals, laboratories and medical schools on one other day per week.

Activities participated in by the pupils in the medical-science group during their afternoon meetings included dissecting of a beef heart. During the study of the heart, a local heart specialist was invited to demonstrate the use of an electrocardiograph. Pupils made slides and studied them through the microscope and the

microprojector. Human blood was observed under the microscope. This study was followed by a field trip to the local blood bank. These activities as well as the field trips were planned as the interest of the children unfolded and the community resources became available.

The teacher selected for the dental-science group was the school nurse. Besides enthusiasm she had prepared herself by successfully teaching elementary grooming and health classes. One afternoon per week was used in classroom activity which included: carving teeth from soap, identifying models of teeth, pouring molds of teeth, and making slides of bacteria. Another afternoon a week was used for field trips to observe dental-science people at work. These trips included a dental college, a dental assistant school, a dental laboratory, a metal refinery for dental metals, and dentist's office.

The County Medical Association purchased a microprojector for the groups to use. The two associations furnished other small equipment and supplies which are not normally furnished by the schools.

What did the parents think of the Medical Science and Dental-Science groups? At the end of the first year a questionnaire was sent to all the parents asking them for an unsigned evaluation of the program. All the parents sending in replies (70% return) recommended that a similar program be continued for other pupils of this age. No parent felt that the material was too advanced for this age group. All of them felt that trips away from the school to colleges, hospitals and laboratories were an important part of the program. All but one parent answered that this after-school program stimulated in their child further interest in science (health) as evidenced by conversation, reading or home science activities. An overwhelming number reported that their child's reaction to this program was "enthusiastic." Some of the written comments on the evaluation questionnaire were:

"The Science Program has helped our daughter in taking exceptionally good care of her teeth, and in her conception of health."

"Naturally our son's enthusiasm depended greatly on the particular things he is most interested in. The U.C.L.A. field trip (eye operation) the dissecting of the beef heart, and other similar projects he was greatly enthused about, the lectures, and programs in which there was less individual participation, he did not find so stimulating. This of course shows his age. But the program is

excellent. I would hate to see it stopped. Thank you for the after-school class. It did a great deal for our son."

"My daughter was very enthusiastic about her dental science program and hopes to be able to continue in this field throughout elementary, junior high and high school."

"I believe my child became interested enough in it to help her determine her vocation."

"We were most happy that our boy had this opportunity as it awakened an interest in science which he didn't know he had. He especially liked the field trips and the things he saw and did."

"We felt it surely enriched our son's conversational knowledge with adults when discussing any aspects of science. We have a microscope and various science kits for home fun and he enjoys them more now. Needless to say our younger ones can't wait. The fifth grader's remarks "Tuesday — Lucky You — Science." The second grader's remarks: "Brother has science — that's cool." Our thanks to all that made this program possible, we surely hope they will continue."

The Santa Monica Board of Education has given wholehearted support to this program. They recently reviewed the progress of the after-school science groups and indicated a desire to see the number of such groups increased.

Will these after-school medical-science and dental-science programs become a permanent part of an enriched elementary school offering? Will a program planned in a similar manner function efficiently in other communities? We feel they are worth a try.

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SUGGESTED METHOD FOR AUDIOMETER SCREENING OF YOUNG CHILDREN

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At the White House Conference on Child Health it was estimated that three million children in this country suffer some hearing defect. Naturally, the sooner these defects are found and treated the better will be the chances for improvement in a large percentage of cases. Imagine how confusing it must be to a child to be unable to understand clearly what the teacher and his classmates are saying. The ideal situation would be to have every child tested before entering school. There have been times when a child

was thought to be slow or non-conforming. Later it was discovered that a loss of hearing was the reason for the difficulty.

How often has a teacher or a parent said "I'm not so sure Tommy hears me?" Many times Tommy is so interested in what he is doing that he doesn't bother to listen.

Screening for hearing defects is often postponed until the children are older and better able to indicate when they hear the various changes in frequency. Usually the children are instructed to raise their finger and keep it raised until the sound ceases.

Last year we felt it was most important to include the first grade in our routine screening program. In testing these young children some difficulty was encountered. Their interest was short and they were easily distracted. A way was needed to help them concentrate completely on what they were doing. Often when playing games, they become so intent on what they are doing they don't notice the other things going on about them. For this reason it was thought that possibly a game might be used in the testing. A game using a peg board and pegs was devised.

Following a short unit on ears and sound and a brief introduction to the pure tone audiometer in the classroom, the children were prepared for the actual screening. The next day the children were brought into the health room in groups of four. One child was seated comfortably with the peg board on the desk in front of him. When the headphones were placed on his head, and the test started, he was to have a peg ready in his hand. As soon as he heard a tone, a peg was to be placed in a hole on the same side of the peg board as the ear in which the tone was heard. If he heard the tone in his right ear, he placed the peg on the right side of the peg board. If he heard it in the left ear the peg was placed on the left side of the board. A new peg was used for each different tone.

The nervous tension which is frequently associated with tests conducted with apparatus unfamiliar to the young child was totally absent. Instead there was enthusiasm and interest in a new game.

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